ARTIFICIAL PNEUMOTHORAX VS. REST IN PULMONARY TUBERCULOSIS

By PHILIP KING BROWN, M. D., San Francisco,
Medical Director Arequipa Sanatorium, Consultant Alum Rock Sanatorium, Southern Pacific and St. Joseph's Hospitals

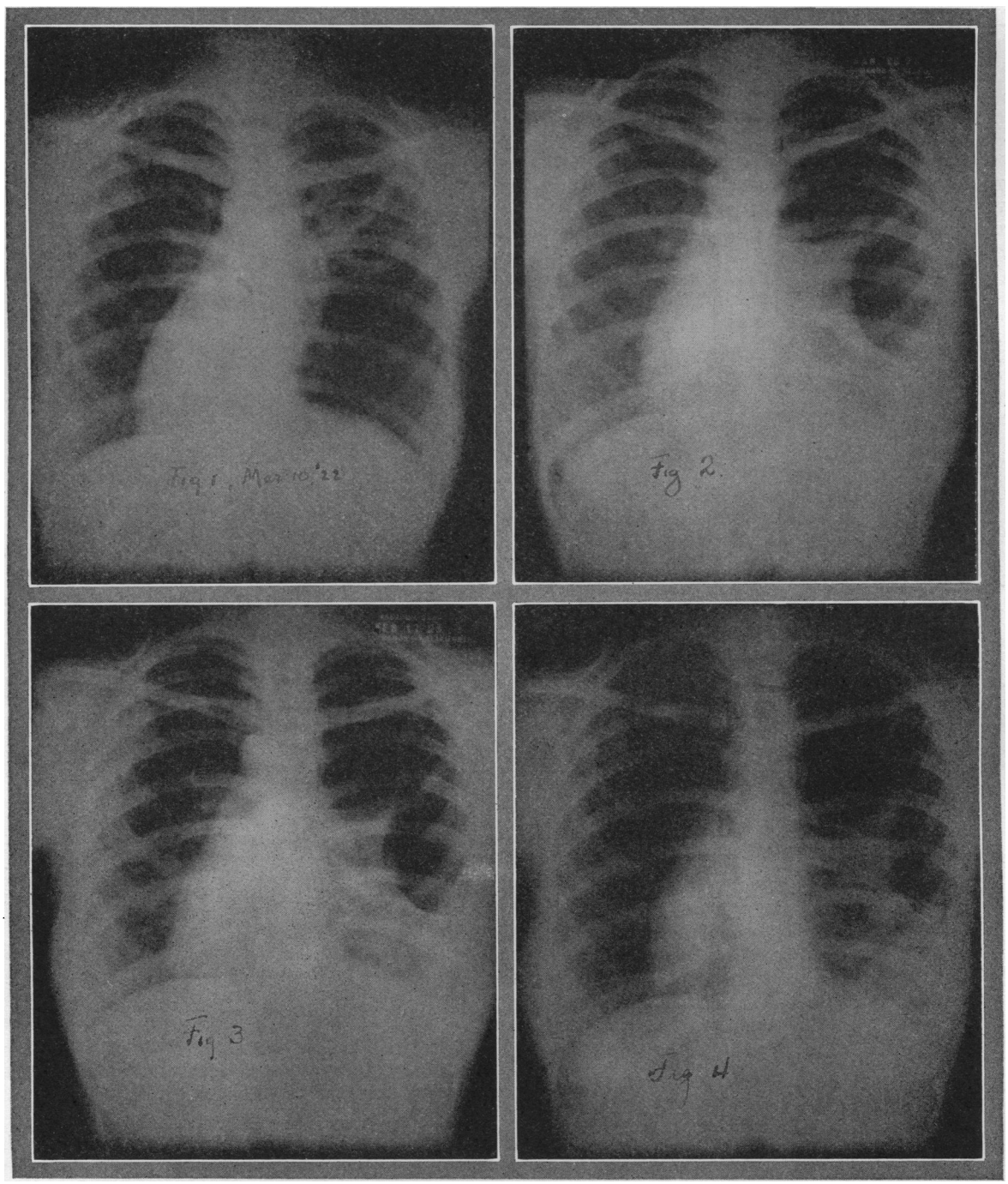
It is not often that one has a chance to compare the effects of bed rest in the treatment of pulmonary tuberculosis with the effects of rest by artificial pneumothorax.

The following case presents the comparison so strikingly that it seems worth making a matter of record:

Mrs. S. A., age 22, referred to Arequipa Sanatorium, March 10, 1922, by Dr. M. P. Burnham, gave the following history. There is no tuberculosis in her family, and her only known exposure was working in a department store near a girl with tuberculosis.

Past History—No serious illnesses and no history of measles, pneumonia, or influenza. Her tonsils were removed six years before under general anesthesia; a wisdom tooth was removed a year before, also under general anesthesia. Cervical repair, following birth of her first child, was also done under ether anesthesia. Seven months later, she consulted a physician for a persistent cough and pain in the right axilla. Her weight had fallen from its highest, 141 at 16, to a general average of 129 when the cough began. Since then, it had gone as low as 115.

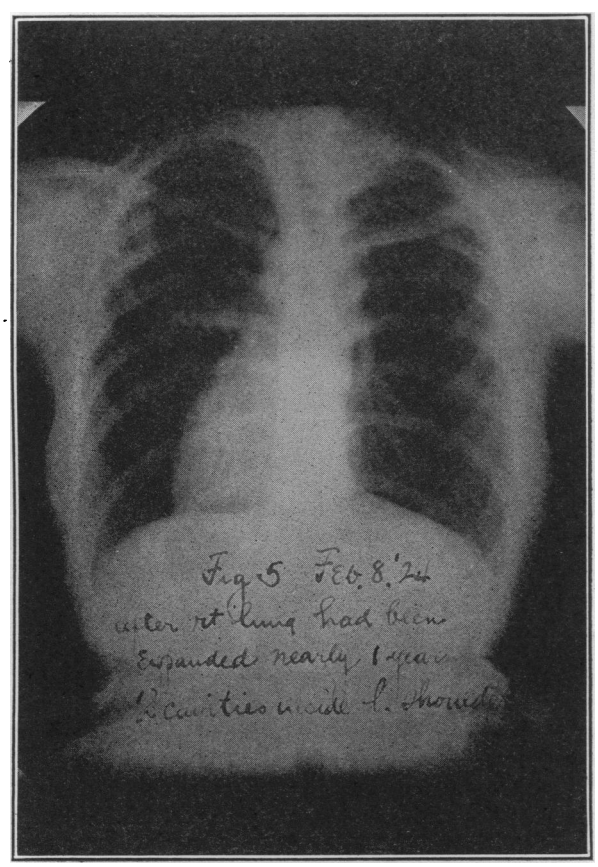
On examination, she was found to have activity in both apices, with especially marked signs in the back. The right upper lobe was quite generally involved, and the upper third of the left upper lobe. Stereo



x-ray plates showed a cavity (see Fig. 1) in the right upper 4 cm. in diameter. It produced no characteristic physical signs.

She was put to bed. Temperature became normal very soon, and in a month the left apex seemed quite inactive. The evidences of pleurisy were constantly present on both sides, but particularly the right, and a partial compression of the right side was done. The left side held up well, and as adhesions were numerous on the right side, threatening to keep open the cavity (Figs. 2, 3, and 4), a full compression was attempted. From April 20, 1922, till March 17, 1923, she was compressed twenty-six times, from 600 to 1450 cc. of air being given at a time. All this time, the left side remained entirely quiet. Toward the end of the period, air sufficient to produce a positive pressure of 5 on the water manometer was introduced, in the hope of stretching the adhesions sufficiently to close the cavity. Within the first six months, she lost her cough and ceased to expectorate. She was afebrile after the first month.

At the end of a year at Arequipa, she was dismissed with the lung compressed and with instructions to report for compression at the clinic. This she did not do, but five months later she reported with her right lung fully expanded and a further gain of five pounds, no cough, no expectoration, no signs of activity in either side, some pleural signs on both sides. She continued to improve for the next few months, when the baby had measles and scarlet fever, and financial worries made matters worse. A cough developed, and in February, 1924, an examination showed activity in the left apex. Plates of the lung (Fig. 5) showed that the original left-sided lesion had become active again after an arrest of nearly two years, and had broken down so that there were two cavities the size of quarters just inside the left shoulder. The right side showed *nothing* on physical examination, and the x-ray plate shows no sign of the cavity, no scar tissue, *nothing*, in fact, to indicate that the lung had been extensively involved two years before, and had a cavity in it as large as a big egg.



A comparison of Fig. 1 and Fig. 5 shows what artificial pneumothorax can do to a well-advanced destructive lesion in the lungs. During the year of compression of that side, while the patient was herself at rest, the arrested lesion in the left apex remained absolutely inactive and showed no signs for a further period of eight months, during which time no extra strain was put on it because the right lung had expanded fully.

Under two months of nervous and physical strain with a bad cold, the left side has a serious relapse, while the right side, many times more involved than the left, remains absolutely sound.

909 Hyde Street.

REPORT OF 300 CASES OF PULMONARY TUBERCULOSIS TREATED WITH PARTIAL ANTIGENS (MUCH-DEYCKE) DURING THE LAST THREE YEARS *

By MAX ROTHSCHILD, M. D., and HARRY WARREN, M. D., San Francisco
(From the California Sanitarium, Belmont, California)

One of the principal differences between the partial antigens of Much-Deycke and other vaccines is, that the tuberculin or toxin is removed, and, as a result of that change, the partial antigens rarely produce reactions when administered. For this reason, they may be used in febrile cases.

The second difference lies in the fact that the residuum of the culture of tubercle bacilli, after the toxin has been eliminated by filtration, is split up, by treating it with alcohol and ether, into three groups—an albuminous group, termed A; a fat acid, termed F; and a neutrad fat group, termed N. These three groups represent the antigens which are used for treatment, according to the presence or absence of the corresponding antibodies. Varying dilutions of the antigens are injected intracutaneously, and by the local reactions resulting it is ascertained which antibody is present and which antibody is absent.

There have been several objections to the partial antigens. The two important ones were, first, the claim that no antibodies existed to lipoids. This objection has been definitely eliminated. It has been proven by European, as well as American schools, that antibodies to fat bodies do exist, and, in fact, play a very important role in vaccine therapy.

The second objection was that the claim of Much that the immunity of the patient could be determined with almost mathematical accuracy by the partial antigens was not substantiated. This objection is undoubtedly justified to some extent. In some cases the clinical picture does not entirely harmonize with the result of the immunity test. There does not exist any immune biological method which would give us a picture of any state of immunity with mathematical accuracy.

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